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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/676,152	09/29/2000	Janos Enderlein	450117-02811	9982
20999	7590	01/04/2005	EXAMINER	
FROMMER LAWRENCE & HAUG			KIM, KEVIN	
745 FIFTH AVENUE- 10TH FL.			ART UNIT	
NEW YORK, NY 10151			PAPER NUMBER	
			2634	

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/676,152

Applicant(s)

ENDERLEIN ET AL.

Examiner

Kevin Y Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 22-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22 recites an OFDM receive, an OFDM transmitter and an OFDM transceiver in a telecommunication device. Since a transceiver is comprised of both transmitter and a receiver, the claim actually recites transmitter and receiver twice, one individually and the other together in the form of a transceiver. This redundant recitation of claim elements is confusing. Therefore, for the purpose of examination, the claim is understood to define an OFDM transceiver comprised of a transmitter and a receiver.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 22-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mujtaba (US 6,813,254) in view of Heid (US 6,157,191).

Consider claims 22, 31,33 and 38. Mujtaba discloses an OFDM telecommunication device, comprising;

an OFDM receiver, see Fig. 13, having a number of analog devices (142,144) for performing an RF/IF down conversion multiplication and convolution step, see col. 7, lines 31-33,

an OFDM transmitter, see Fig. 12, having an inverse Fourier transform, and

an OFDM receiver, see Fig. 13, having an Fourier transform. The claimed invention is different from Mujtaba's device in that it uses "a number of analog devices that execute an analog multiplication step and a convolution step of a multiplication-convolution-multiplication algorithm for performing the inverse Fourier transform for modulation and the Fourier transform for demodulation. Heid teaches a type of Fourier transform which includes analog multiplication and convolution step of the multiplication-convolution-multiplication algorithm, that allows a significantly fewer calculation steps. See Fig. 7 and col. 4, lines 12-33. Thus, it would have been obvious to one skilled in the art at the time the invention was made to use a Fourier transform having a number of analog devices that execute an analog multiplication step and a convolution step of a

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multiplication-convolution-multiplication algorithm, taught by Heid, as the Fourier transform of the OFDM receiver of Mujtaba for the purpose of reducing calculating steps. Although an inverse Fourier transform having a number of analog devices that execute an analog multiplication step and a convolution step of a multiplication-convolution-multiplication algorithm was not expressly taught, it would have been obvious used for the inverse Fourier transform at the OFDM transmitter of Mujtaba since it is well established that the inverse Fourier transform is merely inverse of a Fourier transform as the name implies with the same benefits.

Regarding claims 25-30,35,36,37 and 39. Wireless LAN and DAB-T systems are known to use OFDM and thus it would have been obvious to use the OFDM communication device of Mujtaba modified by Heid in such communication systems.

Regarding claims 23,32,34 see modulator (132) in Fig.12 performing an IF/Rf up-conversion.

Regarding claims 24, 33 see demodulator (142) in Fig.13 performing an IF/Rf down-conversion.

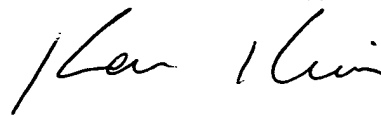
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KEVIN KIM
PATENT EXAMINER

A handwritten signature in black ink, appearing to read 'Kevin Kim', is written over the printed name and title.